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Case Report

Gastroschisis-can be prevented?

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ABSTRACT

Gastroschisis is a congenital anterior abdominal wall defect, adjacent and usually to the right of the umbilical cord insertion. Gastroschisis has no covering sac and no associated syndromes. This differentiates it from an omphalocele, which usually is covered by a membranous sac. G4P3L1D2 by date 37 weeks by scan 37 weeks (17.2) Ultrasonography S/O Gastrochisis delivered a male baby of 2.4kg and was shifted to the NICU. The exposed contents were given cellulose dressing. On post-natal day 2 baby was taken for abdominal wall repair. Baby was started on Ryle's tube feeding and was further managed by the neonatologist.

Keywords: Gastrochisis, Omphalocoele

INTRODUCTION

Gastroschisis is a congenital anterior abdominal wall defect, adjacent and usually to the right of the umbilical cord insertion, that occurs in 1 of 4000 births.[1] It is exclusively seen in infants of mothers younger than 20 years of age, low socio-economic status, smoking, alcohol consumption.

Unlike an omphalocele, the herniated bowel is in direct contact with amniotic fluid. Theories concerning the etiology of gastroschisis are usually considered to be the result of a vascular insult.[2]

The term gastroschisis is derived from the Greek word *laproschisis*, meaning "bellycleft." It was used in the 19th and early 20th centuries by teratologists to designate all abdominal wall defects. No clear distinctions were made between abdominal wall defects until 1953, when Moore and Stokes classified them based on their appearance at birth. Gastroschisis has no covering sac and no associated syndromes. This differentiates it from an omphalocele, which usually is covered by a membranous sac.Cardiac and genitourinary abnormalities have been associated with gastroschisis, but presence of extra-gastrointestinal anomalies warrants search for alternative diagnosis.[3-8]

In addition, although gastroschisis may be associated with gastrointestinal anomalies such as intestinal atresia, stenosis, and malrotation, it has a much better prognosis than omphalocele.

CASE REPORT

Patient Mrs. Sahina Javed Shaikh age 26 years G4P3L1D2 By Date: 37 weeks by scan: 37 weeks (17.2) with the referral letter to the OPD on 19/01/2015 at 11.47am with the complaints of pain in abdomen since morning 8 am and USG OBS s/o Gastrochisis.

- No h/o bleeding per vaginum
- No h/o leaking per vaginum.
- No h/o decreased fetal movements.

Patient was registered investigated and had poor ANC follow up OBSTETRIC H/O: married at 14 years of age.

- h/0 of consanginous marriage

Patient had bad obstetric history

- P1D1: FTND home delivery female died after 2yrs (cause unknown)
- P2D2: FTND home delivery male died at 1½ years of age (cause unknown)
- P3l1: FTND home delivery male 4yrs.

No significant past history and family history. Patient's vitals were stable. Systemic Examination: NAD.

Per Abdomen Examination: Uterus term size with longitudinal lie and cephalic presentation, Fetal Heart Sound +140/min regular with uterine contractions 3 in 10 min lasting for 20 seconds. Per vaginal examination: cervix 3cm dilated with 30% effacement, station -2, with membranes present. At 7.40pm patient was fully dilated, SROM occurred on table liquor yellowish in colour. With all aseptic precautions episiotomy was given and baby was delivered in vertex presentation and cried immediately after birth, cord clamped and cut. Baby was immediately shifted to NICU. Male baby 2.4kg. Baby was kept on o2 by hood. Cellulose dressing was done to cover the herniated bowel loops.

Photographs taken after delivery;

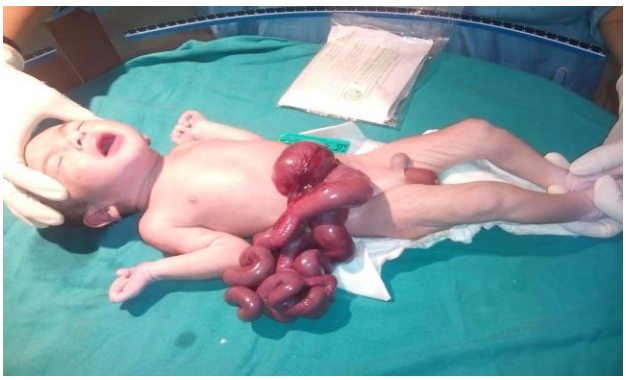

Figure 1: Baby was handed to the paediatrician.

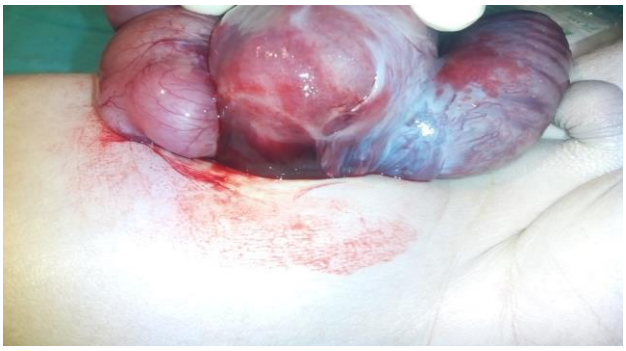

Figure 2: Abdominal wall defect of 6-7cm.

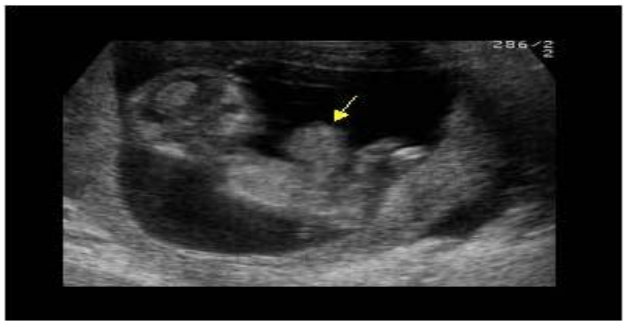

Figure 3: USG report showing freely floating bowel loops.

DISCUSSION

Omphalocele and gastroschisis form a group of congenital malformations with an overall incidence of 1:6600.[9] In contrast to omphalocele, the incidence of associated anomalies in patients with gastroschisis is relatively infrequent. The exception is the occurrence of intestinal atresia, which may complicate gastroschisis in 10-15% of cases. 40% of the patients are either premature or small for gestational age.[10] The problems associated with gastroschisis include heat loss from exposed abdominal contents, fluid loss into and from exposed bowel, infection, gastric distension, associated malformations.[11] Since gastroschisis exposes the fetal intestines to the amniotic fluid and are unprotected during pregnancy, there is an increased risk for third trimester complications, such as bowel dilatation, decreased fetal growth and amniotic fluid volume, preterm delivery, as well as the slight risk of fetal death. For these reasons, close surveillance of gastroschisis in the third trimester using a combination of sonography and fetal surveillance testing (biophysical profile, Doppler ultrasound, amniotic fluid volume) is important to monitoring fetalwell being and determining the appropriate time of delivery.[12,13]

Gastroschisis repair or surgical correction of gastroschisis involves the return of the extra-abdominal bowel back into the abdominal cavity followed by abdominal wall closure. This can either be performed with an immediate primary gastroschisis repair, or more commonly, a staged repair approach, depending upon postnatal assessment of the condition of the exposed bowel. Primary gastroschisis repair entails reduction of the bowel and complete abdominal wall closure in one operation. Prenatal exposure of the fetal intestines to the amniotic fluid can be associated with bowel dilatation and inflammation, thus making primary repair not feasible. The staged approach to gastroschisis repair begins at the time of delivery, when the exposed abdominal contents are placed in a protective covering for the infant transfer to the Newborn/ Infant Center. Upon admission to the intensive care, silastic sheeting, commonly referred to as "silo," is placed around the herniated bowel. The silo is then reduced daily at the bedside until the abdominal contents are level with the skin. The infant undergoing gastroschisis repair is then taken to the operating room

for final closure. It is not uncommon to require breathing/ventilatory assistance during this period of time. Although the abdomen is closed after the gastroschisis repair, it takes time for the intestines to recover from gastroschisis. For this reason, first feedings are provided intravenously. Once bowel function returns, as evidenced by the passing of a bowel movement, feedings via a nasogastric (NG) tube are slowly initiated while IV feeds continue. Nasogastric feeds are slowly increased, as tolerated, and oral feeding is introduced. This is a gradual process, and infants who have undergone gastroschisis repair might experience occasional setbacks, including need for bowel rest or additional surgery.

CONCLUSION

Antenatal sonography is the key imaging examination available, with detection rates of 70-72%. Prenatal sonography is the primary imaging modality in pregnancy because it is non-invasive, is rapid, and allows real-time fetal examination. With the use of antenatal sonography, the diagnosis of a surgically treatable malformation is made before birth in an increasing number of fetuses. This allows fetal intervention, in utero transfer, planned delivery in a specialized unit, and antenatal counselling of the parents regarding the likely prognosis and outcome. In an attempt to predict the neonatal outcome in gastroschisis, various antenatal ultrasound parameters have been studied. Several groups have reported on the relationship between bowel dilatation measured antenatally and neonatal outcome. Various cut-off points for the maximum bowel diameter had been explored, but the results varied across the studies. All the studies were limited by small sample size. We also explored the use of other ultrasound findings as a predictor of adverse neonatal outcome. We found that the presence of intrauterine growth restriction did not have any significant correlation with adverse neonatal outcome. Other sonographic features that have been previously explored as a predictor of neonatal outcome are Doppler velocimetry of the superior mesenteric artery and intra-abdominal bowel dilatation. Abuhamad et al found Doppler velocimetry of the superior mesenteric artery and its branches to be minimally useful in predicting the postnatal prognosis when compared to bowel dilatation. Intra-abdominal bowel dilatation with polyhydramnios, on the other hand, is a poor prognostic factor according to McMahon et al. We conclude that the antenatal bowel appearances in gastroschisis are too variable to be useful predictors of neonatal outcome.

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